

MMS ENVIRONMENTAL STUDIES PROGRAM: ONGOING STUDIES

Region: Alaska

Planning Areas: Beaufort Sea, Chukchi Sea

Title: Monitoring the Distribution of Arctic Whales (AK-07-01)

MMS Information Needs to be Addressed: This continuing MMS study is needed for decisions on environmental assessment and exploration monitoring for past and upcoming OCS activity in the Beaufort Sea. It analyses behavioral information needed to identify areas of interest to feeding bowhead whales. In years with active offshore seismic-vessel or drilling operations, the BWASP provides real-time data to MMS and NMFS on each fall migration of bowhead whales across the Alaskan Beaufort Sea for implementing overall limitations on offshore drilling and geological and/or geophysical exploration. Project information is used to ensure that planned activities will not have an immitigable adverse effect on the availability of the bowhead whale to meet subsistence needs by causing whales to abandon or avoid hunting areas. Information is needed each year to monitor the migration of bowhead whales past active seismic, drilling, construction, and production operations. Information from this study also will be needed to support NEPA analysis and documentation for Beaufort Sea Lease Sales, DPPs, and monitoring of Northstar.

Total Cost: \$4,000,000

Period of Performance: FY 2007-2011

Conducting Organization: MMS, NOAA AOC and NMFS NMML

MMS Contact: [Chief, Alaska Environmental Studies Section](#)

Description:

Background The MMS has conducted aerial surveys of the fall migration of bowhead whales each year since 1987. Methods are comparable from year to year, based on similar monitoring dating to 1979. Real-time data are used to implement overall seasonal restrictions and limitations on geological and geophysical exploration. The study provides the only long-term database for evaluating potential cumulative effects of oil- and gas-exploration activities on the entire bowhead-migration corridor across the Alaskan Beaufort Sea. Project reports compare distances from shore and the water depths used by migrating bowheads. Data are collected in a robust GIS-compatible data structure. The bowhead whale is protected under the Endangered Species Act and is of great importance to Alaskan Natives for cultural and subsistence purposes.

Objectives

1. Define the annual bowhead fall migration, significant inter-year differences, and long-term trends in distance from shore and water depth at which whales migrate.
2. Monitor temporal and spatial trends in the distribution, relative abundance, habitat, and behaviors (especially feeding) of endangered whales in arctic waters.

3. Provide real-time data to MMS and the NMFS on the general progress of the fall migration of bowhead whales across the Alaskan Beaufort Sea for use in protection of this Endangered Species.
4. Provide an objective area-wide context for management interpretation of bowhead migrations and site-specific study results.

Methods Aerial surveys, based out of Deadhorse, Alaska, during September and October, monitor the fall bowhead migration between 140°W. and 157°W. longitudes, south of 72°N. latitude. Particular emphasis is placed on regional randomized transects, statistical tests, and power analyses to assess fine-scale shifts in the migration axis of bowhead whales across the Beaufort Sea, and on the coordination of effort and management of data necessary to support seasonal offshore-drilling regulations. The project analyzes migration timing, distribution, relative abundance, habitat associations, swim directions, water depths, and behaviors (especially potential feeding) of whales, as well as ice type and percentage at bowhead sightings. Belugas, gray whales, and polar bears are regularly recorded along with incidental sightings of other marine mammals. Data are also shared with site-specific studies to define bowhead responses to individual oil-industry activities. Incidental oceanographic observations are shared with the National Ice Center and National Weather Service to ground-truth satellite imagery.

Field work will be conducted and various analyses and reports will be prepared by the NMFS, NMML. MMS staff will continue to prepare an annual report concerning the axis of the bowhead migration. Aircraft operations will be managed by the NOAA AOC.

Current Status:

The 2007 field season was successfully completed on October 20, 2007. MMS provided team leaders and NMML provided other staff as needed. Data are being prepared for inclusion in the BWASP database. Work is underway on a report on the 2005 field season.

Final Report Due: July 31, 2011

Publications Completed:

- Final Reports include annual summaries for Fall 1987-2004. Recent reports include OCS Studies MMS 95-0033, 96-0006, 97-0016, 98-0059, 2000-066, 2002-014, 2002-061, and 2005-037.
- Monnett, C. Bowhead Whale Aerial Survey Project. Spoken Presentation at 2005 Alaska Forum for the Environment.
- Monnett, C., J. S. Gleason, and L. M. Rotterman. 2005. Potential effects of diminished sea ice on open-water swimming, mortality, and distribution of polar bears during fall in the Alaskan Beaufort Sea. Abstract and Poster: Ed., Society for Marine Mammalogy, 16th Biennial Conference on the Biology of Marine Mammals.
- Monnett, C. and J. S. Gleason. 2006. Observations of mortality associated with extended open-water swimming by polar bear in the Alaskan Beaufort Sea. *Polar Biology* 29: 681-687.
- Treacy, S. D., J. S. Gleason, and C. J. Cowles. 2006. Offshore distances of bowhead whales (*Balaena mysticetus*) observed during fall in the Beaufort Sea, 1982-2000: an alternative

interpretation, Arctic, 59(1): 83-90.
Gleason, J. S. C. Monnett, and C. J. Cowles. 2006. Long-term changes in habitats associated with polar bear sightings in the Alaskan Beaufort Sea; 1979-2004. Abstract and Poster, The Wildlife Society 13th Annual Conference, September 23-27, Anchorage, Alaska.

Affiliated WWW Sites: <http://www.mms.gov/alaska/>
<http://www.mms.gov/alaska/kids/shorts/bwasp/bwasp.htm>

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